AMES LABORATORY SUSPECT/COUNTERFEIT ITEMS PROCEDURE

This procedure shall be used to conduct a quality review of mechanical and electrical aspects of procured items and direct the prevention, detection, and control of suspect/counterfeit items (S/CI) at the Ames Laboratory. The objective of the S/CI procedure is to prevent the introduction and use of S/CIs through engineering involvement, design, procurement, receipt, inspection, maintenance, evaluation, disposition, reporting, and lessons learned work process controls.

1.0 APPROVAL RECORD

- Reviewed by: QA Coordinator, Training & Documents (Molly Granseth)
- Reviewed by: Electronics Inspector, Facilities & Engineering Services (Robert Fry)
- Reviewed by: Manager, Information Systems (Diane Den Adel)
- Reviewed by: Manager, Procurement & Property Services (Andrea Spiker)
- Approved by: Manager, Quality Assurance (Sean Whalen)
- Approved by: Manager, Facilities & Engineering Services (Doug Hoenig)
- Approved by: Chief Operations Officer (Mark Murphy)

2.0 REVISION/REVIEW INFORMATION

In accordance with the Ames Laboratory Document Control program, this procedure will be reviewed at a minimum of every three years. The revision description for this document is available from and maintained by the author.

3.0 PURPOSE AND SCOPE

This procedure directs the Lab-wide quality procurement review activities performed by the Facilities and Engineering Services (FES) Electronics/Mechanical Technical Support staff and the Ames Laboratory Property & Procurement Services personnel utilizing the software purchase requisition database program designed and maintained by Information Systems. All purchase orders and credit card orders meeting the criteria defined in 3.2 of this procedure shall be reviewed and inspected when quality and safety concerns require safeguarding against acquisition of suspect/counterfeit items.

The Quality Assurance Manager is responsible for the Quality Assurance Program at Ames Laboratory. Responsibility for suspect/counterfeit items (S/CI) is delegated to the FES S/CI Coordinator. Either party may act as the point of contact for S/CI related activities.

3.1. Definitions

Certificate of Conformance. A document signed or otherwise authenticated by an authorized individual certifying the degree to which items or services meet specified requirements.

Certified Material Test Report (CMTR). A written and signed document that is approved by a qualified party and contains data and information that attests to the actual properties of an item and the actual results of all required tests.

Counterfeit. An item that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the supplier or manufacturer. Items that do not conform to established requirements are not

normally considered S/CIs if nonconformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items):

(1) defects resulting from inadequate design or production quality control;
(2) damage during shipping, handling, or storage;
(3) improper installation;
(4) deterioration during service;
(5) degradation during removal;
(6) failure resulting from aging or misapplication; or
(7) other controllable causes.

Critical Load Path. A structural component (e.g., a bolt or fastener) in a crane, hoist, transporter, or other handling or lifting equipment that bears the load being lifted or moved and whose failure under tensile or shear stress could result in an operational safety problem or an unacceptable risk of injury to workers or the public.

Electrical Component. An electrical component is any component in the generation, transmission, distribution, or consumption of electrical power. Examples are circuit breakers, semi-conductors, current and potential transformers, fuses, resistors, switchgear, overload and protective relays, motor control devices, heaters, motor generators, DC power supplies, AC inverters, transmitters, and ground fault circuit interrupters.

Engineering Evaluation. A technical review conducted by qualified engineering and other technical personnel using accepted methods to determine the actual or potential cause of a substantial safety hazard and the effect of an S/CI.

Fastener. A fastener means “metallic screw, nut, bolt or stud having internal or external threads with a nominal diameter of ¼ inch (6 millimeters) or greater, or a load indicating washer, that is through-hardened or represented as meeting a consensus standard that calls for through hardening and that is grade identification marked or represented as meeting a consensus standard that requires grade identification marking…” (*Public Law-106-34, Fastener Quality Act of 1999*)

Graded Approach. Graded approach refers to the process of ensuring the level of analysis, documentation, and actions taken to comply with a requirement are commensurate with characteristics related to an activity, evaluates the probability of event occurrence associated with an activity or process, and assesses the potential impacts of an event. See the Ames Laboratory Graded Approach Application Guide (Guide 10200.071).

Item. An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, or support system.

Nonconformance. A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.

Procurement Buyers. Professional staff in the Procurement and Property Services office of Ames Laboratory who place purchase orders with vendors to acquire goods and services for all Ames Laboratory organizational units.

Purchase Order. The official printed order sent to the selected vendor authorizing acquisition, receipt and payment of the specified goods or services.

Purchase Requisition. The initiating form completed by Ames Laboratory personnel and processed through the Ames Laboratory Property and Procurement Services to initiate acquisition of goods and services and create the final purchase order.

Quality Review. A process by which a procurement buyer determines that an item listed on a purchase order requisition requires an engineering evaluation.

Safety System. A DOE nuclear and nonnuclear facility structure, system, or component whose preventive or mitigative function is a major contributor to defense-in-depth (i.e., prevention of uncontrolled material release) or worker safety as determined from hazard analysis. Also, a DOE structure, system, or component, including a primary environmental monitor or a portion of a process system, whose failure could adversely affect the environment, safety, or health of the public or workers.

Suspect. A condition of an item or part in which there is an indication by visual inspection, testing, or other information that it may not conform to established government or industry accepted specifications or national consensus standards. A suspect item may or may not be nonconforming depending on the outcome of the investigation.

Use-as-is. Disposition permitted for a nonconforming item when it can be established that the item is satisfactory for its intended use and it remains in place.

3.2. Specified Criteria for Procurement Review

3.2.1. Included Purchase Orders or Purchase Card Orders Totaling < $2,500
Purchase order requisitions or government purchase card orders less than $2,500 which meet the following criteria are subject to this review procedure relating to mechanical and electronic/electrical aspects (46200.049 Buyer Guide).

3.2.1.1. Pressurized Vessels or Systems
Pressurized vessels or systems including all boilers, pressure vessels and vacuum systems but do not include nuclear reactors. Pressure systems must be designed, fabricated, tested, inspected, maintained, repaired, and operated in accordance with applicable codes and sound engineering principles by trained and qualified personnel.

3.2.1.2. Welded Structures or Components
Welded structures or components including all systems or components which are fabricated by welding prior to acquisition by Ames Laboratory.

3.2.1.3. Stock Material to be Welded

Stock material to be welded including all material procured with the intent of utilizing welding to join components during the fabrication or installation per Welding Program 46200.001.

3.2.1.4. Counterfeit Items
Any item which might involve counterfeit items (an item falsely claimed to be a level of quality and/or a type of material) is included such as counterfeit bolts including any bolts, components, or systems which are bolted together with fasteners purported to be Grade 5, Grade 8, or Grade A325.

3.2.1.5. Electronic/electrical Devices and/or Equipment
Electronic/electrical devices and/or equipment subject to acquisition are included which do not have a NRTL specification. This procedure is in accordance with the Ames Laboratory Electrical Safety Manual, 46200.001, Chapter 6, "Acquisition, Fabrication, and Maintenance of Electrical Equipment." This review and inspection also covers laser and x-ray equipment relative to applicable Ames Laboratory policies and procedures.

3.2.2. Included Purchase Orders Totaling ≥ $2,500
All purchase orders totaling $2,500 or more receive an automatic engineering evaluation unless eliminated from review by procurement buyers because the item falls into one of the types defined in 3.2.3 of this procedure.

3.2.3. Excluded Purchase Orders Totaling ≥ $2,500
The following types of purchased items or services, regardless of dollar value, do not need a quality review and should be excluded from the database by the procurement buyer using the Deltek Costpoint® system entry process.

Books	Lease arrangements
Chemicals	Maintenance agreements
Commercial compressed gas cylinders	Medicine
Computer software	Paper products
Computer software licenses	Printing costs
Conference fees	Repairs
Fees for tests	Space rental
Furniture	Standing order for analytical costs
Honorariums	Tuition costs

3.3. Training/Administrative Controls
Operating procedural training shall be arranged by the Ames Laboratory Training Program, in cooperation with FES S/CI Coordinator, for the involved FES, Information Services, and Procurement/Property Services staff. The information in this operating procedure and the information in other documents to which it refers shall serve as the basis for this training. Attendance and participation in the procedural training shall be documented in personnel records and maintained in the training office. The operating procedural training will be conducted as procedural changes occur or at a minimum of every 5 years.

Technical training on the specific electronic and mechanical review (engineering review) and inspection activities for S/CIs shall be conducted with cognizant engineers (CE),

technicians, electricians, and subject matter experts and shall be documented on their personnel training records. Refresher training will be conducted annually (AL-254 Suspect/Counterfeit Items Inspection Training).

3.4. Custom Software Programming Maintenance/Assistance

The Ames Laboratory currently uses Deltek Costpoint® software for all accounting, budgeting, procurement, receiving, and property inventory management database purposes. All documentation/schematics on the design and custom operation of the database, utilized as part of the performance of this procedure, shall be retained by the assigned software programmer in Information Services. The software programmer shall provide ongoing support maintenance to the custom database as needed and assist with program modifications necessary to accommodate future revisions of this procedure.

3.5. Procurement

Technical and Quality Assurance (QA) requirements shall be identified in the applicable procurement documents, as necessary.

Contracts should require that items be new unless specified otherwise. The rationale for acquiring used items shall be stated. Contracts should also contain clauses to identify the supplier or subcontractor's responsibilities regarding S/CIs. These clauses shall prohibit subcontractors from bringing S/CIs on site and hold them accountable for replacing S/CIs at their own expense.

3.5.1. Procurement Review

Procurement buyers are trained to identify items for further procurement review, according to the criteria specified in section 3.2. When items are identified for further procurement review, the S/CI Coordinator and inspecting personnel are notified via email to review the flagged purchase order before the purchasing process is allowed to advance. If the inspecting personnel determine the item warrants inspection, the item is electronically flagged for inspection. The inspection process begins upon the receipt of the item.

3.5.2. Receipt Inspections

Property Services personnel responsible for the receipt of packages into the Ames Laboratory shall inspect packages for signs of the possible presence of S/CIs (i.e., re-taped or mislabeled packages or tampering). Responsibilities and actions for receiving packages into the Deltek Costpoint® system that may require quality review for S/CIs are further delineated in section 6.8.2 of the Quality Assurance Program Plan (Plan 10200.026).

3.6. Design Documentation

Cognizant engineer(s) will develop technical specifications for procurement of facility items and determine critical characteristics that should be specified in the purchase contract. The extent of engineering involvement and an items review should be commensurate with the risk and intended application of the item (i.e., graded approach). If necessary refer to the Graded Approach Application Guide (Guide 10200.071).

3.7. Information Dissemination

The S/CI Coordinator will review all available sources to obtain the most accurate, up-to-date information on S/CIs that may have an effect on Ames Laboratory activities and equipment and disseminate such information to relevant individuals. Sources that may be used in this review include:

- Government Information Data Exchange Program (GIDEP)
- DOE S/CI web site
- Occurrence Reporting System (ORPS)
- Lessons Learned and other related bulletins

3.8. Detection

3.8.1. Planning and Scheduling

Planning and scheduling of S/CI inspections for Ames Laboratory systems, structures, equipment, parts, and material will be based on the guidelines contained in the Graded Approach Application Guide (Guide 10200.071). When items are received in Property Services that have been previously identified for inspection in the Deltek Costpoint® system, a daily report is automatically produced and sent to the attention of the S/CI Coordinator and other inspection personnel.

The Quality Control Inspections Due report identifies the purchase order number, a description of the item, requestor's name, and delivery location. Inspections are planned at the earliest possible opportunity.

Items purchased using purchase cards are recorded in the Deltek Costpoint® system. A monthly report of all purchase card items is automatically produced and sent to the attention of the S/CI Coordinator for review and inspection, if necessary. Comments on the review and inspection of suspected items are recorded on the electronic report and maintained on a shared group drive (G:FES/Purchases/QA Credit Card PO Review).

3.8.2. Inspections

Inspections are conducted by trained technical experts in the presence of the purchase requestor whenever possible. Inspection results are recorded in the Deltek Costpoint® system.

Ames Laboratory maintains a minimal inventory of materials and supplies. If new S/CI items are identified, as a result of safety bulletin, operational experience, or ORPS, an inspection of the current inventory will be conducted.

3.9. Reporting

Results of S/CI inspections shall be entered into the Deltek Costpoint® system.

S/CIs shall be reported, documented, and dispositioned using the S/CI Nonconformance Report (NCR)(Form 46200.28) and the completed report will be delivered to the Environmental, Health, Safety and Assurance (ESH&A) Manager for inclusion in the Occurrence Reporting and Processing System (ORPS) as described in DOE Order 232.2 *Occurrence Reporting and Processing of Operations Information*.

NCRs containing S/CI issues shall be reported to the DOE Inspectors General (IG). Destruction of S/CIs shall occur only after the IG has expressed no interest in retaining the items.

All items entered into ORPS or reported to the IG will be entered into the Ames Laboratory Corrective Action Tracking System (ALCATS) for tracking and trending purposes.

3.10. Disposition

The disposition of S/CIs shall be evaluated by the CE and limited to designation as "use-as-is" or "replace". The rigor of the CE's analysis justifying use-as-is dispositions shall be based on a graded approach of the item's suitability for the specific application in the specific system. Only those items found acceptable through engineering analysis and formal disposition shall be designated use-as-is.

3.10.1. Use-as-is

Engineering analysis justifying use-as-is for S/CIs installed in safety systems, critical load paths, or in applications that create potential hazards shall consider potential risks to the public, the worker, and the environment.

Engineering disposition justification in non-safety systems shall confirm that the system is not a safety system, that there is no critical load path, and that continued use will not create a potential hazard to worker, the public, or the environment.

Use-as-is for electrical components is prohibited.

3.10.2. Replace

Engineering evaluations are not required for part replacements that meet or exceed original design requirements.

The CE shall provide a replacement schedule.

Removed S/CIs shall be identified and held until the IG indicates they have no use for the items.

3.10.3. Marking

Installed S/CIs shall be identified and marked with fade-resistant, blue paint or permanent marker. S/CIs which are dispositioned to remain in place shall remain marked for identification to preclude reuse.

3.10.4. Disposal

S/CIs shall be destroyed or rendered completely useless by appropriate means. Documentation attesting to the S/CI destruction shall identify the NCR number and number of S/CIs destroyed, be signed, and be maintained for review.

The IG shall have released parts or documentation prior to destruction.

4.0 PERFORMANCE

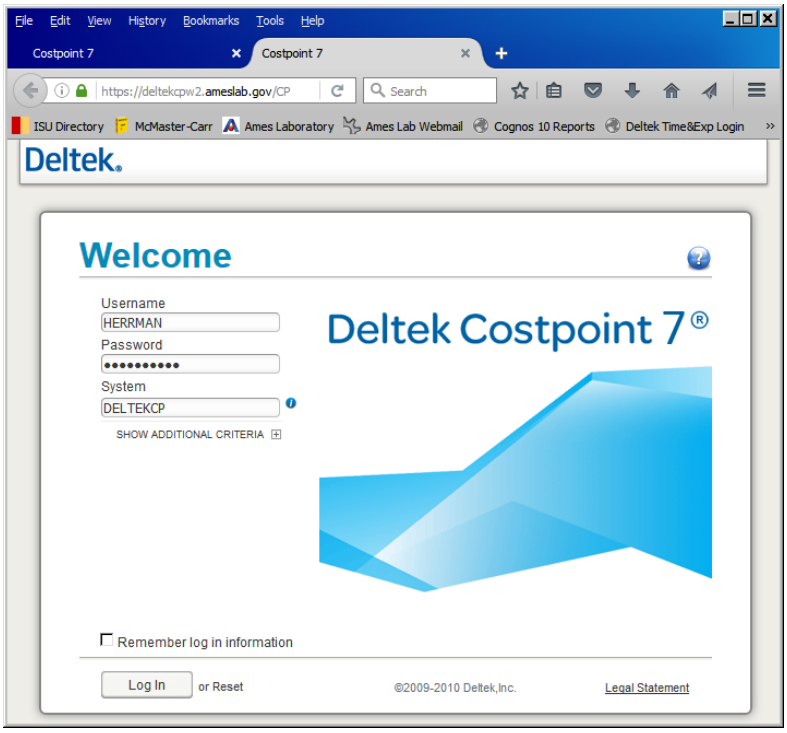
4.1. Procurement Assessment of Purchase Order Requisitions

All purchase order requests are processed through the Purchasing office. The purchasing agent or buyer will place the order and work with the requestor to ensure that the vendor is offering items that conform to the specifications required. Purchase orders (PO) are coded by commodities set up in the Deltek Costpoint® system to trigger a review by an FES specialist or technician according to the criteria identified in section 3.2.

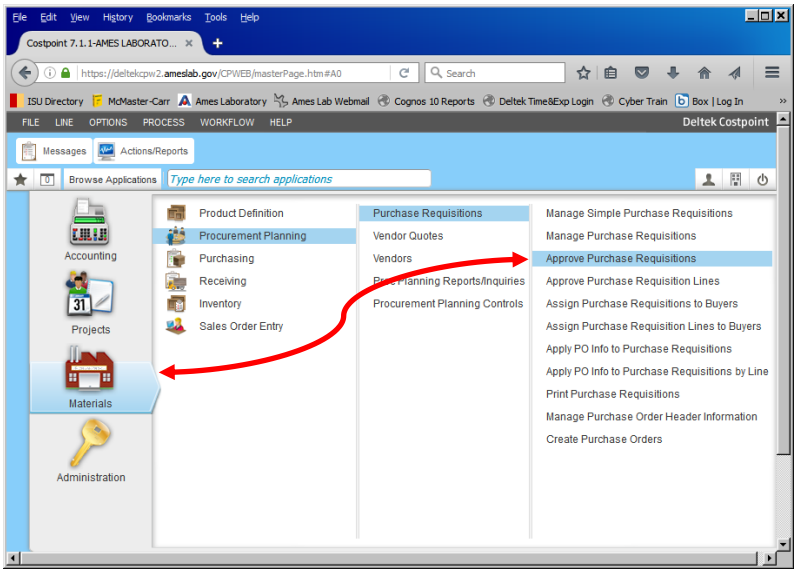
4.2. Deltek Costpoint® System Navigation for PO Quality Review

1) Open Deltek Costpoint® at https://deltekcpw2.ameslab.gov and login under your user account.

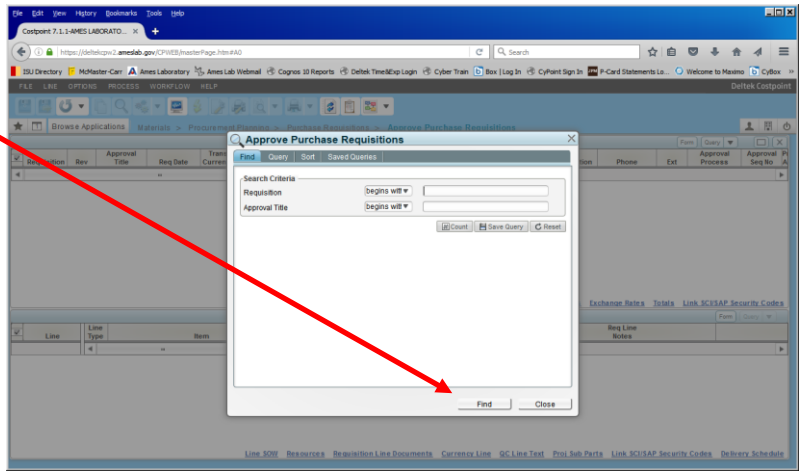
   System: DELTEKCP



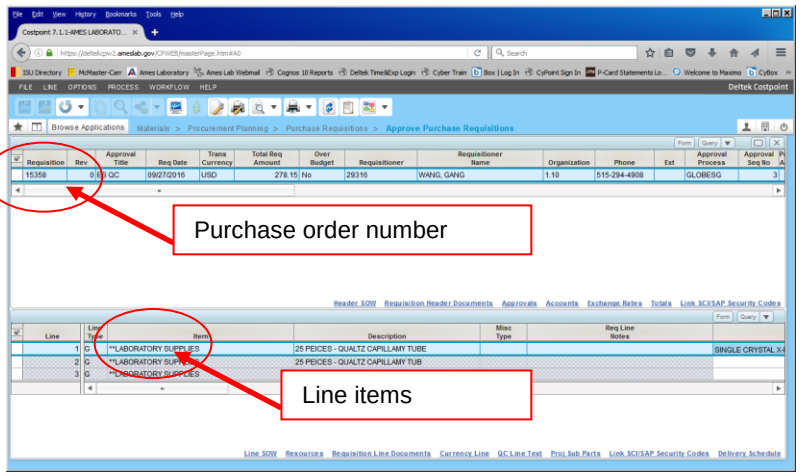
2) Navigate to “Approve Purchase Requisitions” and select.



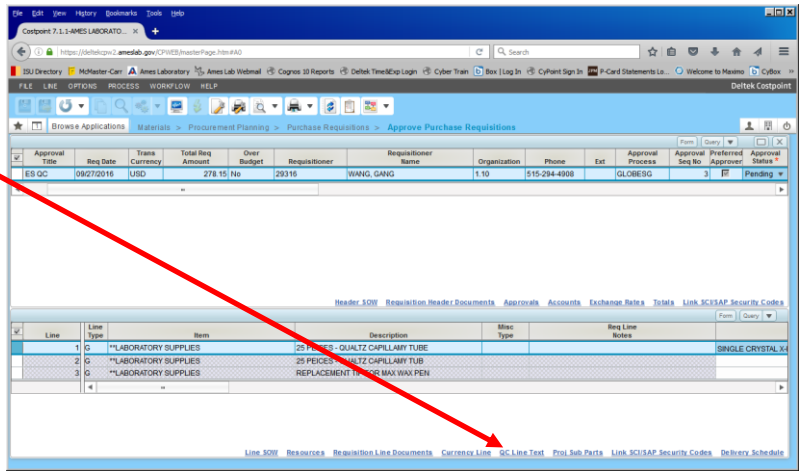
3) After the “Approve Purchase Requisitions” window opens, select the “Find” button.



4) Review the line items of each purchase order displayed. By placing your cursor in any field of the intended purchase order, the line items will appear below.

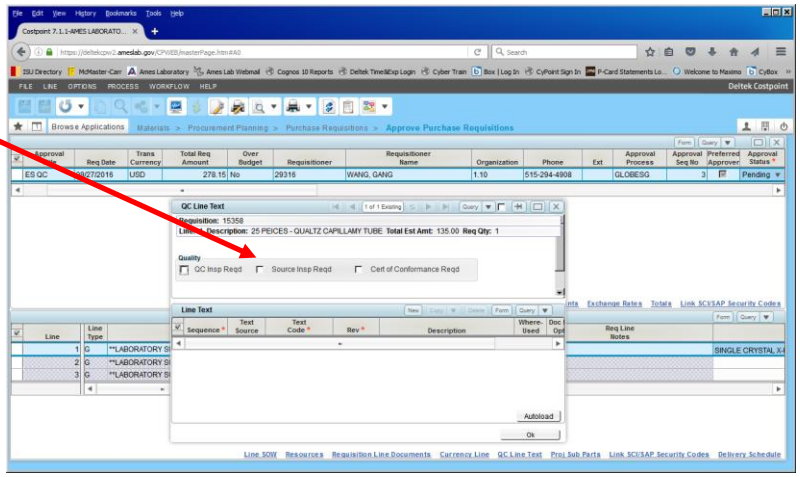


5) If further review is warranted, place your cursor in any field of the line item of concern and select the “QC Line Text” button.



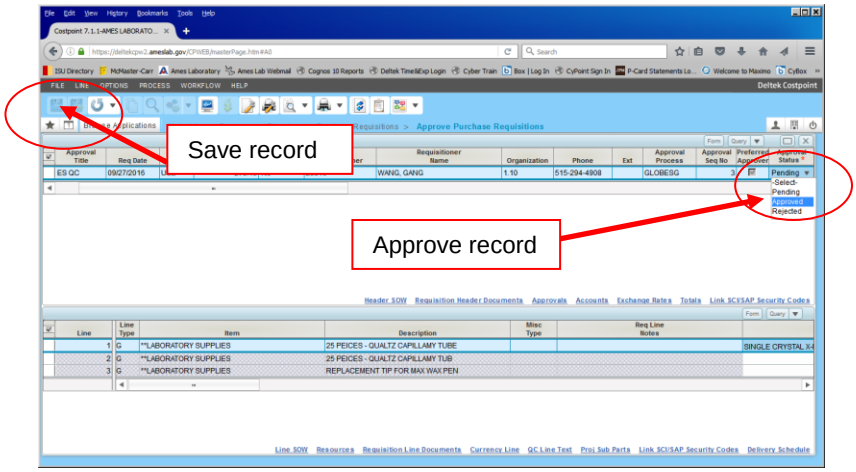
6) The “QC Line Text” window is displayed, select the desired “Quality” inspection required. Typically the “Source Insp Reqd” is selected.

   Choose “Ok”



7) After you have reviewed a specific purchase order, whether it required inspection or not, change the “Pending” indicator to “Approved” and “Save” the record.

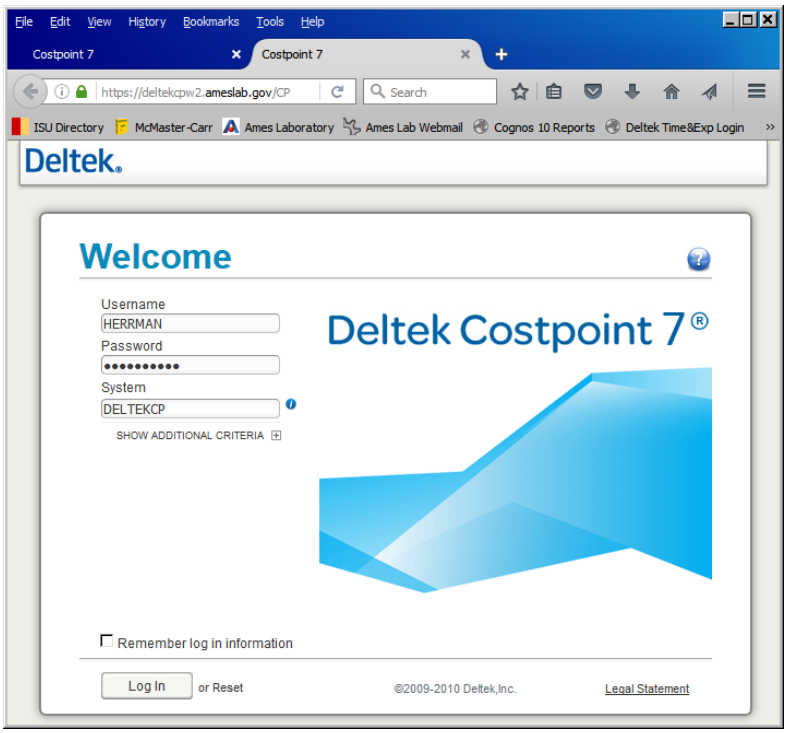
   Repeat the process for each purchase order displayed.



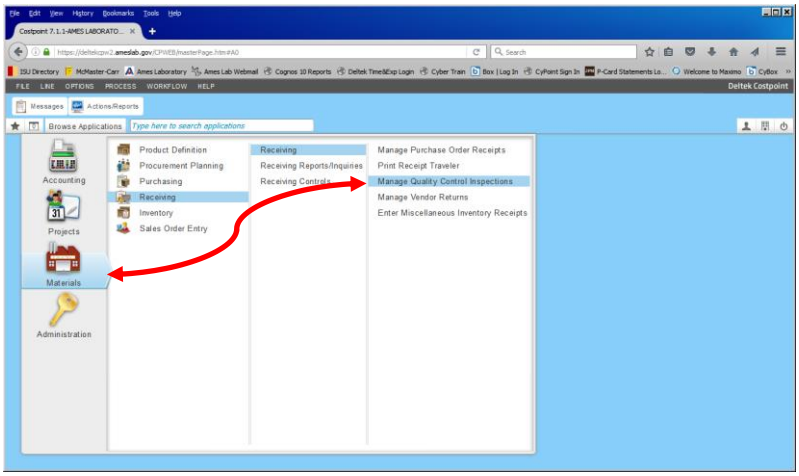
4.3. Deltek Costpoint® System Navigation for S/CI Inspection Results

1) Open Deltek Costpoint® at https://deltekcpw2.ameslab.gov and login under your user account.

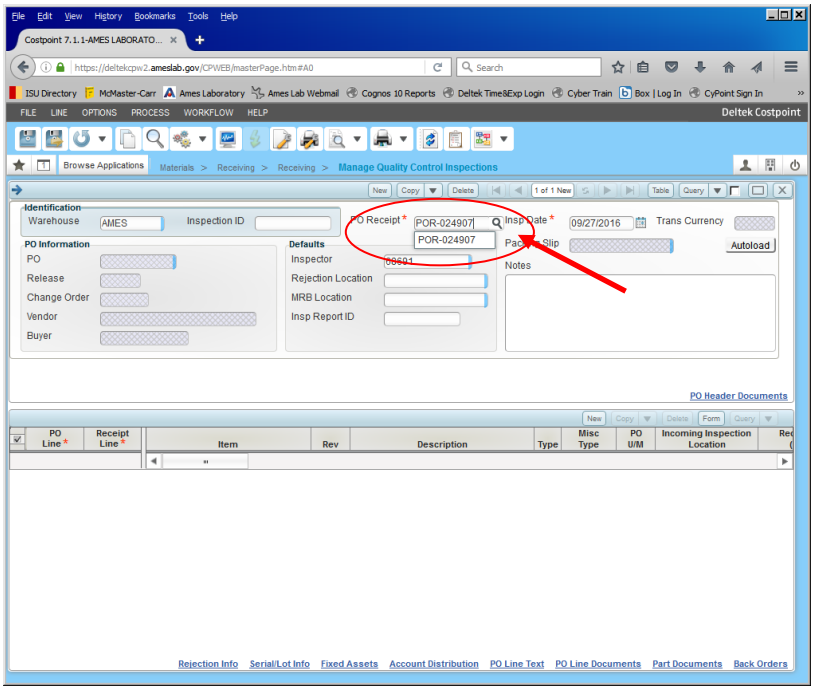
   System: DELTEKCP



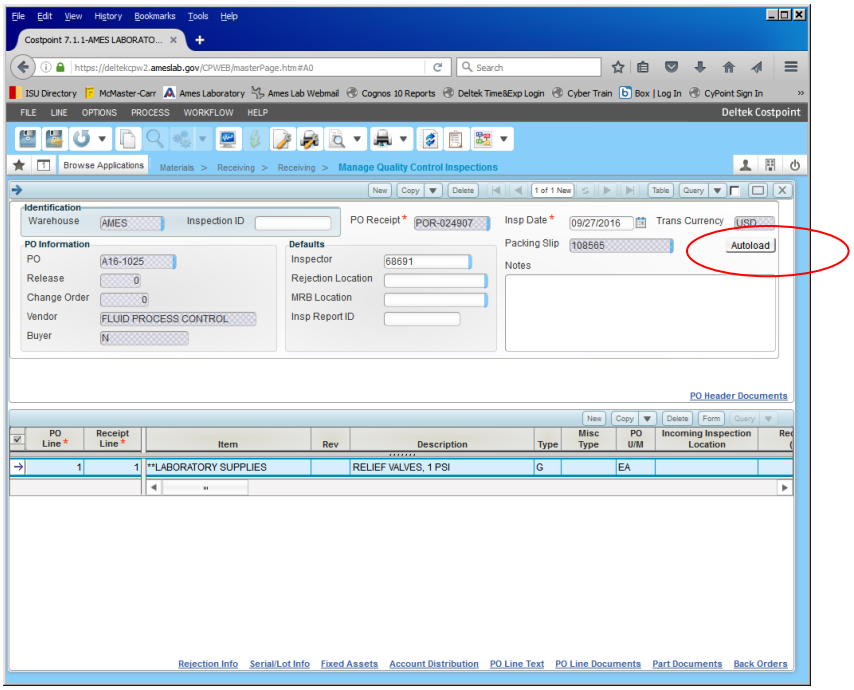
2) To navigate to the “Manage Quality Control Inspections” page select “Materials”, “Receiving”, “Receiving” and finally “Manage Quality Control Inspections” and pick.



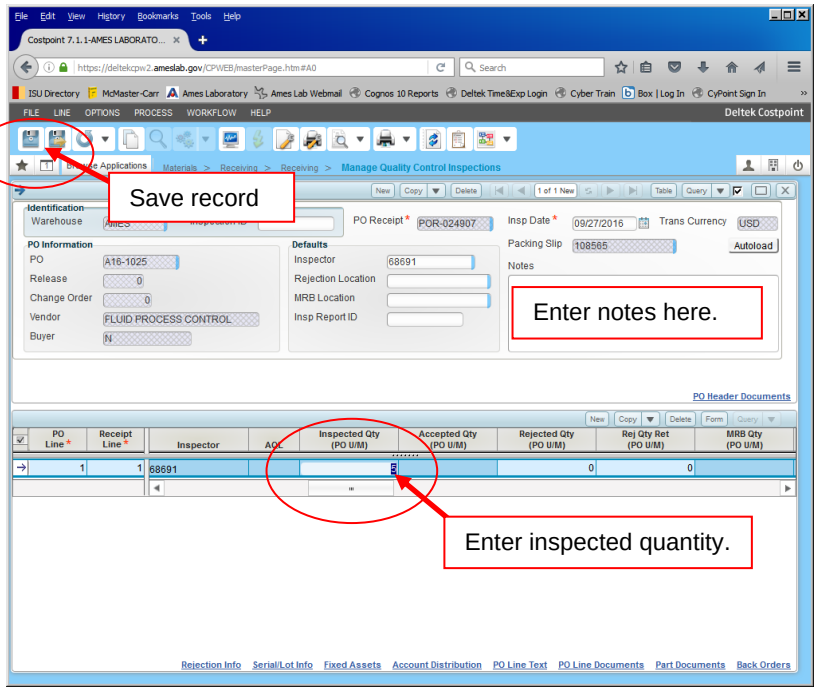
3) Enter the purchase order number of the item in question from the QC Inspections Due form (i.e., POR-024907) and select the search icon or TAB out of the field. The form should populate with the desired information.



4) When the proper PO information is displayed, select the “Autoload” button.



5) Move the scroll bar on the PO line item to the “Inspected Qty” field and enter the number of items inspected. Add acceptance criteria or notes to the “Notes” field. Save the record as before.



5.0 POST PERFORMANCE ACTIVITY

This operating procedure will be reviewed periodically by the S/CI Coordinator to assure the required activities are being performed. If appropriate, this formal written procedure will be clarified or corrected as necessary. Retraining meetings will be conducted as necessary if significant changes occur to this procedure.

6.0 Additional Information

Buyer Guide for Ames Laboratory Quality Review and S/CI Procedure (Guide 46200.049)

S/CI Nonconformance Report (Form 46200.028)